Journal of Bodywork & Movement Therapies (2014) 18, 4–10

Available online at www.sciencedirect.com

SciVerse ScienceDirect

journal homepage: www.elsevier.com/jbmt

CASE REPORT

Osteopathic manipulative treatment of congenital talipes equinovarus: A case report

Elda Andreoli, M.D. [a,*], Andrea Troiani, D.O. [b,c], Valentina Tucci, D.O. [b,c], Gina Barlafante, M.D., D.O. [b,c], Francesco Cerritelli, MPH, D.O. [b,c], Gianfranco Pizzolorusso, D.O. [b,c], Cinzia Renzetti, M.D., D.O. [b,c], Daniele Vanni, M.D. [a], Andrea Pantalone, M.D. [a], Vincenzo Salini, M.D [a]

[a] *Postgraduate School of Orthopaedics and Traumatology Department, University G. d'Annunzio, Via dei Vestini, 31, 66100 Chieti, Italy*
[b] *AIOT Research Institute, Pescara, Italy*
[c] *European Institute for Evidence Based Osteopathic Medicine (EBOM), Chieti, Italy*

Received 7 October 2012; received in revised form 1 March 2013; accepted 20 March 2013

KEYWORDS
Osteopathic manipulative treatment;
Congenital talipes equinovarus;
Clubfoot;
Foot;
Newborn;
Manipulation;
Conservative treatment;
Complementary and alternative treatment

Summary *Background:* Treatment recommendations for congenital talipes equinovarus are focused on conservative treatments.
Objectives: The aim of this paper is to present a case report of bilateral congenital talipes equinovarus treated with two short-leg serial casting in combination with osteopathic manipulative treatment.
Methods: A newborn, 12 days old, with severe bilateral congenital talipes equinovarus entered to the Department of Orthopedics at the University of Chieti, Italy.
The pediatric orthopedic surgeon applied two single series of short-leg casts, at 12 and 20 days of age. The osteopath scheduled 4 indirect myofascial release techniques sessions.
Results: At day 33 the newborn achieved a complete correction of the congenital talipes equinovarus deformity and there was no need to apply a third series of casts.
Conclusions: Results from this single case study create an interesting and clear precedent for considering OMT in future clinical trials.

* Corresponding author. Tel.: +39 3396270177; fax: +39 0854172587.
E-mail address: ort.andreoli@gmail.com (E. Andreoli).

1360-8592/$ - see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.jbmt.2013.03.011

Introduction

Congenital talipes equinovarus (CTE) is defined as a congenital deformity involving one foot or both feet (Batchelor, 1946). It represents one of the most common muscle-skeletal defects at birth and has a prevalence of 1/1000 among live newborns (Dobbs and Gurnett, 2009).

Anatomic abnormalities of CTE affect bones and soft tissues, leading to malalignment of the bones and joints of the foot and ankle. It is distinguished from positional foot anomalies for being supinated and adducted, with varism and equinism associated (Song et al., 1999).

In many cases the cause of CTE is idiopathic (Wynne-Davies, 1964), but the deformity has been also found in 20% of newborns with chromosomal abnormalities, arthrogryposis and myelomeningocele (Brewer et al., 1998; Gurnett et al., 2008a).

Many theories have been advanced to explain the pathogenesis (Merrill et al., 2011; Feldbrin et al., 1995; Herceg et al., 2006), suggesting that CTE can be etiologically heterogenous or secondary to a primary factor leading to the anatomic abnormalities at the level of the foot. In addition to this, among the most recent theories there is data supporting the genetic basis of CTE (Gurnett et al., 2008b; Alvarado et al., 2011).

Although CTE is easy to recognize at birth, it's severity needs to be assessed depending on the grade of resistance of the foot to manipulation. At first visits, orthopedic clinicians refer to two major systems of classification developed by Dimeglio et al. (1995) and Pirani (2004). Both classifications use scores for several physical findings, giving a total score that correlates with CTE severity.

Treatment recommendations for CTE are focused on reducing or eliminating the anatomical deformities, with the patient having optimal mobility and a functional, pain-free, plantigrade foot. Most pediatric orthopedic surgeons agree that the initial treatment should be nonsurgical and start as soon as possible after birth (Sætersdal et al., 2012). Nonoperative treatments include several techniques; among these are the Dimeglio (Bensahel et al., 1990a) and Ponseti (1996) methods.

The Dimeglio method, also known as the French method, consists of an intensive physiotherapy program with the CTE treated daily with manipulative stretching followed by taping of the leg and foot to a splint. The aim of the physiotherapist is to soften the tissues and to make the foot more compliant (Bensahel et al., 1990b; Dimeglio et al., 1996a). Dimeglio in 1996 reported a success rate of 74% patients free from surgical interventions (Dimeglio et al., 1996b), while others reported a higher rate of children needing soft-tissue release surgery for residual CTE (Richards et al., 2008).

The Ponseti method is based on weekly interventions and the technique consists of three main parts: serial manipulation, casting (with or without Achilles tenotomy) and the application of an orthosis. The orthosis is used to position the foot in abduction to maintain the achieved correction (Scher, 2006).

Among various treatment protocols concerning CTE deformity, the Ponseti method is the most effective treatment (Matos & de Oliveira, 2010), with 90% a success rate of 90% at short term and long term results being equally impressive (Laaveg and Ponseti, 1980; Cooper and Dietz, 1995; Segev et al., 2005).

If conservative measures fail to correct CTE deformity, surgery represents the remaining recourse. As a result of nonoperative treatments, the overall number of surgical soft tissue releases has decreased dramatically, with a very low rate of CTE undergoing surgery because of recurrence (Dobbs et al., 2004). However, it is difficult to draw certainty among all these procedures since no structured research has been conducted evaluating the effectiveness of these manipulative techniques.

As far as complementary and alternative medicine is concerned, the literature does not provide any evidence of the applicability of these approaches to CTE and consequently no data are available.

The aim of this paper is to present a case report of bilateral CTE treated with two short-leg serial casting in combination with osteopathic manipulative treatment (OMT) as a complementary procedure.

Methods

Case report

A newborn, 12 days old, white Caucasian female with bilateral CTE entered to the Department of Orthopedics at the University of Chieti, Italy.

The child was born at term, 39 weeks of gestational age, with vaginal delivery. No fetus complications during the pregnancy were observed. The growth of the fetus was regular along the entire period, following the 50th percentile, and no associated pathologies were diagnosed at birth.

The mother, 35 years old, white Caucasian at her third pregnancy, smoker, non-alcoholic, with no history of genetic/congenital disorders, started vasosuprina for premature uterine contractions at 20 weeks of gestational age.

The father, 33 years old, white Caucasian presented no congenital/genetic disorders as well as no history of acquired diseases.

Figure 1 Picture documenting the bilateral CTE before casting. Age of the child: 12 days.